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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-------------------------------|-------------|----------------------|---------------------|------------------|
| 10/019,270 | 01/03/2002 | Tadashi Hayakawa | P21860 | 1881 |
| 7055 | 7590 | 12/18/2003 | EXAMINER | |
| GREENBLUM & BERNSTEIN, P.L.C. | | | BHAT, ADITYA S | |
| 1950 ROLAND CLARKE PLACE | | | ART UNIT | |
| RESTON, VA 20191 | | | PAPER NUMBER | |

2863

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

GA

Office Action Summary

Application No.

10/019,270

Applicant(s)

HAYAKAWA, TADASHI

Examiner

Aditya S Bhat

Art Unit

2863

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10 and 16-22 is/are rejected.
- 7) ☒ Claim(s) 8, 9 and 11-15 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6. 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-7, 10 and 16-22 are rejected under 35 U.S.C. 102(a) as being anticipated by Woolley (USPN 5,959,568).

With regards to claim 1, Woolley (USPN 5,959,568) teaches a distance detection apparatus comprising:

a wireless transmission system circuit that radio transmits a transmission signal after performing signal processing of the transmission signal for signal transmission; (Col.5, lines 39-41)

a wireless reception system circuit that performs signal processing of a reception signal, which was received from an object of distance measurement, for signal reception; (Col.5, lines 35-39) and

a distance detection section that measures a signal delay time in said wireless transmission system circuit and said wireless reception system circuit, and corrects a distance measurement value that is obtained by measuring a distance to the object, by using the signal delay time. (Col. 6, lines 57-67 & Col. 7, lines 1-8)

With regards to claim 2, Woolley (USPN 5,959,568) teaches a time difference between transmission timing by said wireless transmission system circuit and reception timing by said wireless reception system circuit: in a case where the transmission signal output from said wireless transmission system circuit is directly input into said wireless reception system circuit is measured, and the measured time difference is set as the signal delay time. (Col. 8, lines 29-45)

With regards to claim 3, Woolley (USPN 5,959,568) teaches a first reference timer that generates first reference timing; (112; figure 13) and

a signal generation section that generates a periodic signal synchronized with the first reference timing to input the periodic signal to said wireless transmission system circuit as the transmission signal;(Col. 22, lines 47-48) wherein

said distance detection section detects a first phase difference indicating a degree of a discrepancy of reception timing of the reception signal received from the object from the first reference timing, and detects the distance to the object by using the

Art Unit: 2863

first phase difference, the detected signal delay time, a second phase difference and a signal delay time both being detected at the object. (Col. 38, lines 15-20)

With regards to claim 4, Woolley (USPN 5,959,568) teaches the object is a communication station that has a second reference timer for generating second reference timing independently, and that measures the signal delay time at the object, and that detects a second phase difference indicating a degree of a discrepancy of the reception timing of the reception signal from the second reference timing, and that generates a periodic signal synthesized with the second reference timing in response to the reception of the transmission signal to transmit the generated periodic signal. (Col. 30, line 18)

With regards to claim 5, Woolley (USPN 5,959,568) teaches correcting the first phase difference by using the detected signal delay time to obtain a corrected phase difference, and detects the distance to the object by using the corrected phase difference and an informed corrected phase difference informed by the object. (Col. 12, lines 60-62)

With regards to claim 6, Woolley (USPN 5,959,568) teaches the objects a communication station that has a second reference timer for generating second reference timing independently, and that measures the signal delay time at the object, and that detects a second phase difference indicating a degree of a discrepancy of the reception timing of the reception signal from the second reference timing, and that corrects the second phase difference by using the signal delay time at the object, and that transmits the corrected phase difference as the informed corrected phase difference. (210; figure 15)

With regards to claim 7, Woolley (USPN 5,959,568) teaches distance detection section transmits the first phase difference and the detected signal delay time, or a corrected phase difference of the first phase difference corrected by the detected signal delay time to the object, and receives the second phase difference and the signal delay time, or a corrected phase difference of the second phase difference corrected by the signal delay time from the object. (Col. 8, lines 29-45)

With regards to claim 10, Woolley (USPN 5,959,568) teaches distance detection section determines a correction quantity for an adjustment of the first reference timer and the second reference timer by a use of the corrected phase difference and the informed corrected phase difference. (Col. 12, lines 60-61)

With regards to claim 16, Woolley (USPN 5,959,568) teaches the transmission signal is a spectrum-spreading signal. (130 & 132; figure 12)

With regards to claim 17, Woolley (USPN 5,959,568) teaches the apparatus performs wireless communication between the object in conformity with a spectrum spreading communication mode. (see figure 8)

With regards to claim 18, Woolley (USPN 5,959,568) teaches a method for detecting a distance to an object of distance measurement, said method comprising:
detecting respective signal delay times of a wireless transmission system circuit for executing signal processing of a transmission signal for transmitting and a wireless reception system circuit for executing signal processing of a reception signal for receiving; (Col. 5, lines 35-39)

transmitting the transmission signal to the object through the wireless transmission system circuit; (Col.5, lines 39-41)
receiving a signal transmitted in response to reception of the transmission signal from the object; (Col.5, lines 35-39) and
calculating a distance to the object by using phase information of the reception signal and the detected signal delay time. (Col.6, lines 57-67)

With regards to claim 19, Woolley (USPN 5,959,568) teaches a method for detecting a distance to an object of distance measurement, said method comprising
detecting respective signal delay times of a wireless transmission system circuit for executing signal processing of a transmission signal for transmitting and a wireless reception system circuit for executing signal processing of a reception signal for receiving; (Col.5, lines 35-39)
transmitting the transmission signal to the object through the wireless transmission system circuit; (Col.5, lines 39-41)
receiving a reflected wave of the transmission signal from the object ; (Col.5, lines 35-39)and
calculating a distance to the object by using phase information of the reception signal and the detected signal delay time (Col.6, lines 57-67)

With regards to claim 20, Woolley (USPN 5,959,568) teaches a distance detection apparatus comprising:
a wireless transmission system circuit that transmits a transmission signal after performing signal processing of the transmission signal for signal transmission; (Col.5, lines 39-41)
a wireless reception system circuit that performs signal processing to a reception signal, which was received from an object of distance measurement, for signal reception; (Col.5, lines 35-39)
a recording medium storing a distance detection program; (Col. 5, line 33) and
a processor operating in conformity with the distance detection program, wherein measure signal delay times in the wireless transmission system circuit and in the wireless reception system circuit, and makes said processor transmit the transmission signal to the object through the wireless transmission system circuit, and further makes said processor calculate a distance to the object by using phase information of the reception signal and the detected signal delay time when the wireless reception system circuit received the reception signal from the object. (Col. 5, lines 15-26)

With regards to claim 21, Woolley (USPN 5,959,568) teaches a distance detection apparatus comprising:
a wireless transmission system circuit that transmits a transmission signal after performing signal processing of the transmission signal for signal transmission; (Col.5, lines 39-41)
a wireless reception system circuit that performs signal processing of a reception signal, which was received from an object of distance measurement, for signal reception; (Col.5, lines 35-39)

a recording medium storing a distance detection program; (Col. 5, line 33) and a processor operating in conformity with the distance detection program, wherein the distance detection program makes said processor measure signal delay times in the wireless transmission system circuit and in the wireless reception system circuit, and makes said processor transmit the transmission signal to the object through the wireless transmission system circuit, and further takes said processor calculate a distance to the object by using phase information of the reception signal and the detected signal delay time when the wireless reception system circuit received a reflected wave of the transmission signal from the object . (Col. 5, lines 15-26)

With regards to claim 22, Woolley (USPN 5,959,568) teaches the recording medium is any one of a semiconductor memory, a magnetic recording medium, an optical recording medium, and an optical magnetic recording medium. (Col. 5, line 33)

Claim Objections

The following is a statement of reasons for the indication of allowable subject matter: Claims 8-9 and 11-15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sunden (USPUB 2003/158686) teaches phase difference delay control system in distance measuring system, and Vock et al (USPN 6,539,336) teaches sports monitoring system for determining airtime, speed power absorbed and other factors such as drop distance

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S Bhat whose telephone number is 703-308-0332. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone number for the organization where this application or proceeding is assigned is 703-308-5841.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Aditya S. Bhat
December 12, 2003



John Barlow
Supervisory Patent Examiner
Technology Center 2800

